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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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10/594,437

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EXAMINER

HARRIS, GARY D

ART UNIT

PAPER NUMBER

1794

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DELIVERY MODE

11/25/2009

PAPER

**Please find below and/or attached an Office communication concerning this application or proceeding.**

The time period for reply, if any, is set in the attached communication.

<b>Office Action Summary</b>	<b>Application No.</b> 10/594,437	<b>Applicant(s)</b> SAKAMOTO ET AL.	
	<b>Examiner</b> GARY D. HARRIS	<b>Art Unit</b> 1794	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

### Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

### Status

- 1) ☒ Responsive to communication(s) filed on 28 September 2009.
- 2a) ☐ This action is **FINAL**.                      2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

### Disposition of Claims

- 4) ☒ Claim(s) 1-46 is/are pending in the application.
- 4a) Of the above claim(s) 18-30 is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-17 and 31-46 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

### Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

### Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All    b) ☐ Some \*    c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

### Attachment(s)

- |  |   |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892)  | 4) <input type="checkbox"/> Interview Summary (PTO-413)<br>Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftperson's Patent Drawing Review (PTO-948)  | 5) <input type="checkbox"/> Notice of Informal Patent Application                       |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08)<br>Paper No(s)/Mail Date <u>7/30/09, 05/05/09, 05/30/08, 10/26/06</u> . | 6) <input type="checkbox"/> Other: _____  |

**DETAILED ACTION**

***Election/Restrictions***

1. Claims 18-30 & 47-51 are withdrawn from further consideration pursuant to 37 CFR 1.142(b), as being drawn to a nonelected invention, there being no allowable generic or linking claim. Applicant timely traversed the restriction (election) requirement in the reply filed on 9/28/2009. Examiner apologizes for missing newly added claims.

Claims 1-17 and 31-46 are examined in the instant application as follows:

***Claim Rejections - 35 USC § 102***

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(a) the invention was known or used by others in this country, or patented or described in a printed publication in this or a foreign country, before the invention thereof by the applicant for a patent.

2. Claims 1-6, & 8-12, 31-41 are rejected under 35 U.S.C. 102(a) as being anticipated by Kako et al. JP 2004-002911.

As to Claim 1, JP 2004-00291 discloses a rare earth magnet (Paragraph 002 & 004) and a surface of a permanent magnet containing a rare earth element as a primary component is melted (Paragraph 4) and then quenched to form an amorphous layer (Paragraph 5) where the amorphous layer contains elements from the magnetic body (rare earth materials constituting all elements of the magnetic body) (Paragraph 005).

As to Claim 2, JP '291 discloses the rare earth magnetic body containing rare earth amorphous layer formed on the magnetic body is produced by a laser method (similar to applicant's) and produces an amorphous layer (amorphization of the magnetic body) (Paragraph 007).

As to Claim 3, JP 291 discloses a Ni-plated layer (see drawing 4) (passivation layer passivated by a chemical conversion treatment) provided on a surface of the amorphous layer (Paragraph 0002).

As to Claim 4, JP 2004-00291 discloses a rare earth magnet such as NdFeB (Paragraph 002 & 004) and a surface of a permanent magnet containing a rare earth element as a primary component is melted (Paragraph 4) and then quenched to form an amorphous layer (Paragraph 5). The amorphous layer contains elements from the magnetic body (rare earth materials identical to main component elements of the magnetic material) (Paragraph 005). A Ni-plated layer (see drawing 4) (protection layer) is formed on a surface of the amorphous layer (Paragraph 0002).

As to Claim 5, JP 2004-00291 discloses the magnetic body having an Nd rich phase (polycrystalline) similar to applicant (Paragraph 003).

As to Claim 6, JP 2004-00291 discloses the rare earth magnet is made by fusing the surface with a laser and then quenching to produce the amorphous layer. Since the materials are not changing only the characteristics of the surface they would have the same elemental compositions as claimed (Paragraph 005).

As to Claim 8, JP 2004-00291 discloses a surface of a permanent magnet containing a rare earth element as a primary component is melted using a laser beam, an electron beam, or the like (bombarding the surface of the magnetic body with solid particles or particle beams to denature the surface), in creating the amorphous layer (Paragraph 0007).

As to Claim 9, JP 2004-00291 discloses the amorphous layer on said permanent magnet is 15 microns (Paragraph 0005).

As to Claim 10, JP 2004-00291 discloses a rare earth magnetic body containing a rare earth element (NdFeB) (Paragraph 002 & 004). On the surface of the permanent magnet is an amorphous layer that is obtained by bombarding the surface with solid particles or particle beams (laser) that would denature the surface of the magnetic body (Paragraph 0007). A Ni-plated layer (see drawing 4) is provided on a surface of the amorphous layer (Paragraph 0002).

As to Claim 11-12, JP 2004-00291 discloses the protective layer is a Ni-plated (metal) layer (see drawing 4) is provided on a surface of the amorphous layer (Paragraph 0002).

As to Claim 31, JP 2004-00291 discloses the rare earth magnet is made by fusing the surface with a laser and then quenching to produce the amorphous layer. Since the materials are not changing only the characteristics of the surface they would have the same elemental compositions as claimed (Paragraph 005). The protective layer is a Ni-plated (metal) layer (see drawing 4) (passivation) provided on a surface of the amorphous layer (Paragraph 0002)

As to Claim 32, JP 2004-00291 discloses the magnetic body having an Nd rich phase (polycrystalline) similar to applicant (Paragraph 003).

As to Claim 33, JP 2004-00291 discloses the magnetic body having an Nd rich phase (polycrystalline) similar to applicant (Paragraph 003).

As to Claim 34, JP 2004-00291 discloses the rare earth magnet is made by fusing the surface with a laser and then quenching to produce the amorphous layer. Since the materials are not changing only the characteristics of the surface they would have the same elemental compositions as claimed (Paragraph 005).

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As to Claim 35, JP 2004-00291 discloses the rare earth magnet is made by fusing the surface with a laser and then quenching to produce the amorphous layer. Since the materials are not changing only the characteristics of the surface they would have the same elemental compositions as claimed (Paragraph 005).

As to Claim 36, JP 2004-00291 discloses a rare earth magnetic body containing a rare earth element (NdFeB) (Paragraph 002 & 004). On the surface of the permanent magnet is an amorphous layer that is obtained by bombarding the surface with solid particles or particle beams (laser) that would denature the surface of the magnetic body (Paragraph 0007). A Ni-plated layer (see drawing 4) is provided on a surface of the amorphous layer (Paragraph 0002).

As to Claim 37, JP 2004-00291 discloses a rare earth magnetic body containing a rare earth element (NdFeB) (Paragraph 002 & 004). On the surface of the permanent magnet is an amorphous layer that is obtained by bombarding the surface with solid particles or particle beams (laser) that would denature the surface of the magnetic body (Paragraph 0007). A Ni-plated layer (see drawing 4) is provided on a surface of the amorphous layer (Paragraph 0002).

As to Claim 38, JP 2004-00291 discloses the amorphous layer on said permanent magnet is 15 microns (Paragraph 0005).

As to Claim 39, JP 2004-00291 discloses the amorphous layer on said permanent magnet is 15 microns (Paragraph 0005).

As to Claim 40-41, JP 2004-00291 discloses the protective layer is a Ni-plated (nickel) (metal) layer (chemically converted film) (see drawing 4) is provided on a surface of the amorphous layer (Paragraph 0002).

***Claim Rejections - 35 USC § 102 / 35 USC § 103***

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

3. Claims 7 is rejected under 35 U.S.C. 102(a) as anticipated by or, in the alternative, under 35 U.S.C. 103(a) as obvious over JP 2004-00291.



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As to Claim 7, JP 2004-00291 discloses a pickling pretreatment prior to Ni-plating (Paragraph 0005). But does not disclose the arithmetic mean roughness Ra ranging from 0.1-1.5 microns. However, given the amorphous treatment of the surface by the applicant and JP '291 use a laser; they would necessarily/inherently have a similar surface profile (Ra). It has been held that where claimed and prior art products are identical or substantially identical, or are produced by identical or substantially identical processes, the burden of proof is shifted to applicant to show that prior art products do not necessarily or inherently possess characteristics of claimed products where the rejection is based on inherency under 35 USC §102 or on prima facie obviousness under 35 USC §103, jointly or alternatively. *In re Best, Bolton, and Shaw*, 195 USPQ 430. (CCPA 1977).

Alternatively, an arithmetic mean roughness Ra of the surface side of the amorphous layer being 0.1 to 1.5 microns would be obvious to one of ordinary skilled in the art to manipulate the arithmetic mean roughness Ra in preparing the surface for an additional protective layer.

In the event it is shown that JP 2004-00291 does not disclose the claimed invention with sufficient specificity, the invention is obvious because JP 2004-00291 discloses the claimed constituents and discloses that they may be used in combination.

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***Claim Rejections - 35 USC § 103***

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

4. Claims 13- 17, & 42- 46 are rejected under 35 U.S.C. 103(a) as being unpatentable over JP 2004-00291 in view of Ishizake et al. JP 2000-034503.

As to Claim 13, 14, 16, 43 & 45, JP 2004-00291 discloses the protective layer is a Ni-plated (metal) layer (see drawing 4) is provided on a surface of the amorphous layer (Paragraph 0002) but does not disclose an oxide. However, Ishizake et al. JP 2000-034503 discloses an oxidized silicon coating or a silicon nitride coating on a rare earth magnet as a protective coating (Paragraph 0021), to obtain a precise coating formation (layer) (Paragraph 21). It would have been obvious to one skilled in the art to utilize a silicon oxide and/or nitride coating as a protective layer in order to obtain a precise coating layer.

As to Claim 15, JP 2004-00291 discloses the protective layer is a Ni-plated (metal) layer (see drawing 4) is provided on a surface of the amorphous layer (Paragraph 0002) but does not disclose an oxynitride. However, Ishizake et al. JP 2000-034503 discloses an oxidized silicon coating or a silicon nitride coating on a rare earth magnet as a protective coating (Paragraph 0021), to obtain a precise coating formation (layer) (Paragraph 21). It would have been obvious to one skilled in the art to

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utilize a silicon oxide and/or nitride coating as a protective layer in order to obtain a precise coating layer. One skilled in the art would immediately recognize that if Ishizake '503 silicon oxide or nitride would serve as a protective layer then a silicon oxynitride would serve a similar purpose.

As to Claim 17, JP 2004-00291 discloses the protective layer is a Ni-plated (metal) layer (see drawing 4) is provided on a surface of the amorphous layer (Paragraph 0002). JP 2000-034503 discloses a protective polymer (phenolic, epoxy, melamine and xylene resin) layer on a permanent magnet provides a degree of protection (Paragraph 0005). It would be obvious to one skilled in the art to utilize a polymer to provide a degree of protection to a permanent magnet.

As to Claim 42, JP 2004-00291 discloses the protective layer is a Ni-plated (nickel) (metal) layer (chemically converted film) (see drawing 4) is provided on a surface of the amorphous layer (Paragraph 0002).

However, Ishizake et al. JP 2000-034503 discloses an oxidized silicon coating or a silicon nitride coating on a rare earth magnet as a protective coating (Paragraph 0021), to obtain a precise coating formation (layer) (Paragraph 21). It would have been obvious to one skilled in the art to utilize a silicon oxide and/or nitride coating as a protective layer in order to obtain a precise coating layer.

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As to Claim 44, JP 2004-00291 discloses the protective layer is a Ni-plated (nickel) (metal) layer (chemically converted film) (see drawing 4) is provided on a surface of the amorphous layer (Paragraph 0002).

However, Ishizake et al. JP 2000-034503 discloses an oxidized silicon coating or a silicon nitride coating on a rare earth magnet as a protective coating (Paragraph 0021), to obtain a precise coating formation (layer) (Paragraph 21). It would have been obvious to one skilled in the art to utilize a silicon oxide and/or nitride coating as a protective layer in order to obtain a precise coating layer. One skilled in the art would immediately recognize that if Ishizake '503 silicon oxide or nitride would serve as a protective layer then a silicon oxynitride would serve a similar purpose.

As to Claim 46, JP 2004-00291 discloses the protective layer is a Ni-plated (metal) layer (see drawing 4) is provided on a surface of the amorphous layer (Paragraph 0002). JP 2000-034503 discloses a protective polymer (phenolic, epoxy, melamine and xylene resin) layer on a permanent magnet provides a degree of protection (Paragraph 0005). It would be obvious to one skilled in the art to utilize a polymer to provide a degree of protection to a permanent magnet.

5. Claims 14, 16, 43 & 45 are rejected under 35 U.S.C. 103(a) as being unpatentable over JP 2004-00291 in view of JP 2003-178918.

As to Claim 14, JP 2004-00291 discloses the protective layer is a Ni-plated (metal) layer (see drawing 4) is provided on a surface of the amorphous layer (Paragraph 0002) but does not disclose a nitride. However JP 2003-178918 discloses the use of nitrides of Titanium as a protective film for a rare earth magnet (Paragraph 0008). It would have been obvious to one skilled in the art to use a nitride to provide a protective film as taught in JP 2003-178918.

As to Claim 16, JP 2004-00291 discloses the protective layer is a Ni-plated (metal) layer (see drawing 4) is provided on a surface of the amorphous layer (Paragraph 0002) but does not disclose a chemically converted film containing at least one kind of elements selected from a group composed of chromium, cerium, molybdenum, tungsten, manganese, magnesium, zinc, silicon, zirconium, vanadium, titanium, iron, and phosphorus. . However JP 2003-178918 discloses the use of nitrides of titanium as a protective film for a rare earth magnet (Paragraph 0008) and is considered a chemical conversion. It would have been obvious to one skilled in the art to use a nitride of titanium to provide a protective film as taught in JP 2003-178918.

As to Claim 43 & 45, JP 2004-00291 discloses the protective layer is a Ni-plated (nickel) (metal) layer (chemically converted film) (see drawing 4) is provided on a surface of the amorphous layer (Paragraph 0002) but does not disclose the nitride. However JP 2003-178918 discloses the use of nitrides of titanium as a protective film for a rare earth magnet (Paragraph 0008) and is considered a chemical conversion. It

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would have been obvious to one skilled in the art to use a nitride of titanium to provide a protective film as taught in JP 2003-178918.

Column and line numbers are provided for convenience. However, the entire reference should be considered.

### ***Conclusion***

Any inquiry concerning this communication or earlier communications from the examiner should be directed to GARY D. HARRIS whose telephone number is (571)272-6508. The examiner can normally be reached on 8AM - 5PM EST.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Mark Ruthkosky can be reached on 571-272-1291. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

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/G. D. H./Gary D. Harris  
Examiner, Art Unit 1794

/Kevin M Bernatz/  
Primary Examiner, Art Unit 1794

November 23, 2009